Power Xpert Software

Contents

Description *Page*

Power Xpert Software
- Product Selection Guide **173**
- Features and Benefits **174**
- Product Selection **177**

An Eaton Green Solution

Power Xpert Software

Product Description

Power Xpert Software is the fusion of key components of PowerNet and PowerVision Software into a single power monitoring package, which includes ease of interconnectivity to a wide range of Eaton and third-party communicating devices.

Power Xpert Software provides an easy upgrade path to allow existing PowerNet users to enjoy the benefits of power monitoring through a simple Web browser interface. It provides a complete software solution to manage your power system. Critical components such as metering devices, protective relays, circuit breaker trip units, motor starters and uninterruptible power supplies communicate vital information about the health and status of critical infrastructure devices.

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Product Selection Guide

Power Xpert Software Professional Edition

- Geared toward end users, with built-in support for Eaton power distribution products such as switchgear, UPSs, breakers, PDUs, RPPs, meters, relays, VFDs and MCCs, among others
- Eaton products connect with the software directly via an Ethernet connection, while legacy devices use a Power Xpert Gateway to Web-enable their communications
- A subset of third-party meters and devices are supported as standard via the gateway connection

Power Xpert Software Enterprise Edition

- Geared toward advanced power users, system integrators and enterprises with heterogeneous device spectrum and system developers who can take advantage of the included SNMP and Modbus integration development utilities
- Extensive support for third-party devices via standard SNMP and Modbus TCP protocols
- Large variety of ready made, optional third-party drop in drivers available

Power Xpert Software Features

Feature Sets	Power Xpert Software Professional Edition	Power Xpert Software Enterprise Edition
Server module	■	■
Trend viewer module	■	■
Layout manager module	■	■
Quality manager module	■	■
Eaton device support (switchgear, UPSs, breakers, ePDUs, meters, relays, VDFs, MCCs, etc.)	■	■
Power Xpert Gateway third-party device support	■	■
SNMP connector		■
Modbus connector		■
Optional third-party driver support		■
Custom third-party device driver support		■

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Features and Benefits

Power Xpert Software

Feature	Benefit
General	
Web browser user interface	There is no need to install a separate client piece of software on your computer. Simple and easy access via Web browser from any location in the world.
Web-based monitoring capabilities	Monitor all power system equipment through the Internet.
Downloadable software version updates	Receive the latest enhancements and versions via downloads available from Eaton's Web site.
Event Notification	
Event notification via e-mail notification	Receive automatic e-mails when events are triggered.
Event notification via pagers, text message or third-party interfaces	Receive alarms on event changes via pagers, text message or third-party interfaces.
Alarm state management	Acknowledge, clear and close alarms through Power Xpert Software.
Event indicator displayed without Web page active	The Web page you are on does not need to be active to display the event indicator.
Alarm/event searching and filtering	Conveniently search and filter alarms and events to quickly find what you are looking for.
Waveform attached to applicable power event	Waveforms captured by meters are attached to actual power events, making them easy to understand and interpret.
Web browser based waveform viewing	There is no need to install a separate waveform viewer on your computer. Waveforms can be easily reviewed right in your Web browser.
Alarm capabilities based on device driven events	Alarms and triggered events come to the software directly from the associated devices, eliminating false alarms.
Analysis and Trending	
Graphic Trend Viewer	Displays power system device measurements in an easy-to-understand graphical chart format.
Chart or data option selection	Conveniently view the data in either spreadsheet type data format or a graphic line chart plot.
Multiple trends display	Displaying multiple trends at a time helps analyze event ramifications and impact in more detail.
Multiple axis support	Multiple trends can be plotted on multiple x and y axis, displaying pertinent time and scale information.
View multiple variables (i.e., Ia, Ib, Ic, Vab, Vbc, etc.) for a single waveform	Multiple waveform variables can be viewed at a time, eliminating the need of changing views frequently.
Standard COMTRADE file format support	View, import and open any waveform captures in standard IEEE® (C37.111-1999) COMTRADE file format.
Customizable Trend Viewer look and feel	The formatting of the data, and the look and feel of it can be easily customized according to user preferences.
Fixed or custom time frames	Information displayed in the Trend Viewer can have either system-defined fixed or user-selected custom time frames.
Trend analysis capabilities	Trends can be easily spotted and analyzed on screen or exported to third-party software for further analysis if necessary.
Data export	Trend data can be easily exported to Excel for further analysis.
Custom Graphics and Layouts	
Custom graphics development via Web browser	Customized Web pages can be easily developed using a plain Web browser, eliminating the need to install a separate application to be installed, learned and utilized.
Four user view example templates included as standard	Easily use 'as is' or modify as necessary: data center, plant, hospital and geographical layout templates.
iFrame capability	iFrames enable embedding browser portals into custom Web page layouts.
Browser Portal Widget support	Browser Portal Widgets can be embedded in iFrames to accommodate streaming media feeds.
Streaming media support	Multiple streaming media feeds can be embedded into a single Web page, utilizing iFrames technology.
Graphic object library included as standard	A large object library including most common power devices is embedded within the system, enabling the user to develop mimic screens from the start.
ISO® standard electrical picture objects available	Add ISO standard compliant graphics to one-line diagrams or other layouts for ISO compatibility.
Graphic files import capability	Import floor plans, street maps or photographs to be used as background images or mimic objects in Web pages.
Graphic object animation capability	Graphics can be animated based on event and threshold changes. An object could change color, for example, when a threshold is reached.
Gauge object library support	A multitude of gauges are provided in the standard object library to enable easy Web page custom measurement gauges design.
External Web links support	Add Web links to Power Xpert Software pages, which link to any device, Web page on the Internet and network around the globe with a Web user interface.
Alarm bubble-up support through several page layers	Alarms can be easily bubbled-up through multiple Web pages with the folder link feature. Event can be seen on the topmost page and the user can drill down for more information.
Trend object support	Trend objects can be embedded into the layout, enabling viewing the data directly in the Trend Viewer.

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Power Xpert Software, continued

Feature	Benefit
UPS Shutdown	
File saving during shutdown	During an emergency shutdown due to an extended power failure outlasting the UPS battery, open files on the computer systems are closed and saved in an orderly fashion.
Automatic, orderly and sequential shutdown	All operating systems running Power Xpert Software Shutdown Agent will be shut down in an orderly and sequential fashion to prevent data loss.
Parallel redundant UPS shutdown capability	Built-in software logic will initiate shutdown only after UPS redundancy has been lost and the last UPS is out of runtime.
Security and Administration	
Windows Authentication Security	Control access to Power Xpert Software via Windows® Authentication Service.
Two-tier secure system access support	Access the Power Xpert Software with read or write privileges to prevent unauthorized tampering.
SSL	Supported via OpenSSL.
Secure Web browser access (support for HTTPS)	Supported via OpenSSL.
Time Synchronization	
Time synchronization support for connected devices with 1 millisecond time resolution	Millisecond-based timestamp support (when supported by connected device) enables understanding the sequence of rapidly occurring events.
Export and Integration	
Extended Excel® spreadsheet support	Open report files directly in Excel.
SQL database query support	Power Xpert uses standard SQL database format that can be queried by third-party applications for system integration and data exchange.
Logs	
System Log	The System Log gathers information on system-level events for error and security purposes.
Error Log	The Error Log gathers information on errors occurred for diagnostic purposes.
Service	
Eaton help desk services (1-877-ETN-CARE)	Call Eaton to speak directly to a product specialist providing support for the software.
Turnkey startup service	Purchase a 1, 2 or 5-day startup service package from Eaton for turnkey system installation and configuration.
System Backup	
Power Xpert Software system backup	Easily back up Power Xpert software including configurations, user views and device setups.
Documentation and Training Videos	
System Administrator's Guide	Guides users on how to administer Power Xpert Software.
Power Xpert Software User's Guide	Detailed information of Power Xpert Software features and functionality along with screenshots and references.
Layout Manager Guide	Detailed information on how to use Layout Manager's features and functionality to create custom graphic system pages.
Quick Start Guide	Takes the guesswork out of initial software installation and configuration with clear step-by-step instructions on how to get started.
Power Xpert Software Introduction and Training Video	Learn the main features and functionality of Power Xpert Software by watching a hands-on video showing you how to install, configure and use the software.
Power Xpert Reporting Introduction and Training Video	Learn the main features and functionality of Power Xpert Reporting by watching a hands-on video showing you how to install and configure reporting. Included are step-by-step instructions on how create reporting hierarchies and pull data out of different databases.

Note: These specifications are subject to change without notice and represent the maximum capabilities of the product with all options installed. This is not a complete feature list. Features and functionality may vary depending on selected options and product model. Please refer to the technical data sheet and user manual for detailed specifications.

Communication Protocol Support

Communication Protocol	Description
Dry-contact/contact closure/relay	Contact closure support is enabled via various Eaton Gateway devices. Please refer to Power Xpert Software Hardware Compatibility List for details.
BACnet WS+	BACnet WS+
Modbus RTU	Modbus RTU
Modbus TCP	Modbus Protocol over TCP
TCP/IP	Transmission Control Protocol
SNMP	Simple Network Management Protocol
SMTP	Simple Mail Transfer Protocol
INCOM	Eaton Legacy Protocol
HTTP	Hypertext Transfer Protocol
HTTPS	Hypertext Transfer Protocol with SSL
SSL	Secure Sockets Layer

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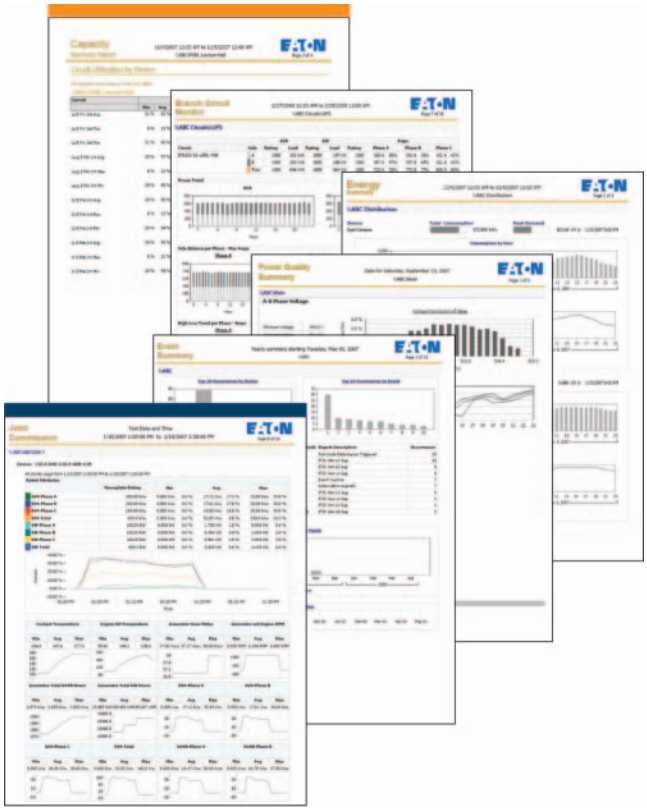
Power Xpert Reporting—the perfect complement

Power Xpert Reporting helps bring information from the software together. Power Xpert Software brings together your power system information from around the floor to around the world—data and information that is invaluable. Power Xpert Reporting brings all the power system information together to compare, contrast and generally give you the big picture. Power Xpert Reporting provides a standard set of reports, including:

- **Data Center Efficiency Report:** A summary of data center infrastructure efficiency and power usage effectiveness, including such information as temperature and humidity, and energy consumption
- **Greenhouse Gas Report:** Captures the six offensive greenhouse gasses: Carbon Dioxide, Sulfur Dioxide, Nitrogen Oxide, Mercury, Methane and Nitrous Oxide broken down by selected locations within a facility
- **Utilities Report:** Captures consumption of water, air, gas, electricity and steam (WAGES)
- **Capacity Summary Report:** The summary of top- and bottom-loaded circuits, as well as loading details for each circuit according to user-defined date/time range and facility hierarchy location
- **Branch Circuit Monitoring Report:** Determine branch circuit loading levels at a glance with color-coded graphics indicating loading status against capacity. Redundant sources can be reviewed, as well as single source loads
- **Energy Summary Report:** The summary of consumption (kWh) and demand (kW) for a user-defined date/time range and facility hierarchy location
- **Energy Cost Allocation Report:** The total energy bill dollar value or a cost per kWh across a facility hierarchy for a user-defined date/time range
- **Power Quality Report:** The distribution and trend for amps, volts and THD according to user-defined date/time ranges and facility hierarchy location
- **Event Summary Report:** Provides a Pareto chart of events according to user-defined date/time ranges and facility hierarchy location
- **Joint Commission Report:** Standard Joint Commission compliant report supports hospital power test requirements. It checks events, key metrics of generators and automatic transfer switches (ATS) during generator testing at user-defined date/time ranges and facility hierarchy location



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Product Selection

Power Xpert Software

Description	Catalog Number
Power Xpert Software Professional Edition	
Power Xpert Software Professional Edition	**PXS-PRO**
Power Xpert Software Professional Edition w/ 1-day startup	**PXS-PROn1S**
Power Xpert Software Professional Edition w/ 2-day startup	**PXS-PROn2S**
Power Xpert Software Professional Edition w/ 5-day startup	**PXS-PROn5S**
Power Xpert Software Professional Edition and Power Xpert Reporting	**PXS-PROnPXR**
Power Xpert Software Enterprise Edition	
Power Xpert Software Enterprise Edition	**PXS-ENT**
Power Xpert Software Enterprise Edition w/ 1-day startup	**PXS-ENTn1S**
Power Xpert Software Enterprise Edition w/ 2-day startup	**PXS-ENTn2S**
Power Xpert Software Enterprise Edition w/ 5-day startup	**PXS-ENTn5S**
Power Xpert Reporting	
Power Xpert Reporting—single source DB connection	**PXR**
Power Xpert Reporting—up to 2 source DB connections	**PXR-2DB**
Power Xpert Reporting—up to 5 source DB connections	**PXR-5DB**
Power Xpert Reporting—up to 10 source DB connections	**PXR-10DB**
Power Xpert Reporting—up to 25 source DB connections	**PXR-25DB**
Power Xpert Reporting—up to 50 source DB connections	**PXR-50DB**
Service Packs	
Power Xpert 1-day startup Service Pack	**PX-1S**
Power Xpert 2-day startup Service Pack	**PX-2S**
Power Xpert 5-day startup Service Pack	**PX-5S**

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Technical Data and Specifications

Hardware Requirements

Power Xpert Software (PXS) requires a server-class machine with the following minimum hardware specifications:

Hardware	Specification
Processor	2.8 GHz, dual-core processor
Memory	2 GB allocated for PXS (allocate 3 GB of memory to a virtual machine session running PXS)
Disk space required for application	The PXS application itself requires 190 MB of disk storage
Disk space required for database	A typical database will grow to 2 GB within a year. If you have a large number of devices, reserve additional storage space
Video resolution	1280 by 1024 pixels or higher
Removable media	DVD RO drive

You may wish to add the following hardware as well:

- Local printer
- Sound card (if sounds are assigned to specific alarm conditions)
- Modem (for remote alarm notification to machines not available via your network)

Software Requirements

Supported operating systems

- Microsoft® Windows Server 2003 R2 (Standard or Enterprise) 32-bit edition
- Microsoft Windows XP Professional (32-bit) with Service Pack 3, 32-bit
- Windows Server 2008 (Standard or Enterprise), 32-bit or 64-bit
- Windows Server 2008 R2 (Server or Enterprise), 32-bit or 64-bit
- Windows 7 Professional, Ultimate or Enterprise editions, either 32-bit or 64-bit

Software components

- IIS 5.0 or higher (must be installed prior to installing PXS; for Windows 7 and Windows Server 2008, this is installed automatically)
- Microsoft Internet Explorer® 7.0 or 8.0

Third-Party Software Installed

The following Microsoft software is also installed during the PXS installation.

- .NET Framework 3.5 SP1
- Windows Installer 4.5
- C++ Runtime Library 2008
- Microsoft Data Access 2.8
- SQL Server 2008 Express SP2
- SQL Server 2005 Express Management Studio SP2

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Index

A

about, 1
Access, 4, 7
access, 3-4
accommodate, 3
according, 3, 5
Acknowledge, 3
across, 5
active, 3
actual, 3
Add, 3
add, 7
additional, 7
administer, 4
Administration, 4
Administrator, 4
advanced, 2
advantage, 2
after, 4
against, 5
Agent, 4
air, 5
Alarm, 3
alarm, 7
Alarms, 3
alarms, 3
All, 4
all, 3-5
allocate, 7
allocated, 7
Allocation, 5
allow, 1
along, 4
also, 7
among, 2
amps, 5
An, 1, 3
an, 1-4
Analysis, 3
analysis, 3
analyze, 3
analyzed, 3
and, 1-7
animated, 3
animation, 3
any, 3
applicable, 3
application, 3, 7
applications, 4
are, 2-4, 7
around, 3, 5
as, 1-3, 5, 7
Assemblies, 1-7
assigned, 7
associated, 3
at, 1-7
ATS, 5
attached, 3
Authentication, 4
Automatic, 4
automatic, 3, 5
automatically, 7
available, 2-3, 7
axis, 3

B

back, 4
background, 3
Backup, 4
backup, 4
BACnet, 4
based, 3-4
battery, 4
be, 3-5, 7
been, 4
Benefit, 3-4
Benefits, 1, 3
benefits, 1
big, 5
bill, 5
bit, 7
bottom, 5
Branch, 5
branch, 5
breaker, 1
breakers, 2
bring, 5
brings, 5
broken, 5
Browser, 3
browser, 1, 3-4
bubble, 3
bubbled, 3
Built, 4
built, 2
by, 3-5, 7

C

CA, 1-7
Call, 4
call, 1-7
can, 2-5
capabilities, 3-4
capability, 3-4
Capacity, 5
capacity, 5
captured, 3
Captures, 5
captures, 3
Carbon, 5
card, 7
CARE, 4
Catalog, 6
Center, 5
center, 3, 5
change, 3-4
changes, 3
changing, 3
Chart, 3
chart, 3, 5
checks, 5
Circuit, 5
circuit, 1, 5
circuits, 5
class, 7
clear, 3-4
client, 3
close, 3
closed, 4
closure, 4
coded, 5
color, 3, 5
com, 1-7
come, 3
Commission, 5
common, 3
communicate, 1
communicating, 1
Communication, 4
communications, 2
compare, 5
Compatibility, 4
compatibility, 3
complement, 5
complete, 1, 4
compliant, 3, 5
components, 1, 7
computer, 3-4
COMTRADE, 3
conditions, 7
configuration, 4
configurations, 4
configure, 4
connect, 2
connected, 4
connection, 2, 6
connections, 6
Connectivity, 1-7
connector, 2
consumption, 5
Contact, 4
contact, 4

Contents, 1
continued, 4
contrast, 5
Control, 1-7
Conveniently, 3
core, 7
Cost, 5
cost, 5
could, 3
create, 4
Critical, 1
critical, 1
Custom, 2-3
custom, 3-4
Customizable, 3
Customized, 3
customized, 3

D

Data, 3, 5, 7
data, 3-5
database, 4, 7
databases, 4
date, 5
day, 4, 6
DB, 6
December, 1-7
defined, 3, 5
Delivery, 1-7
demand, 5
depending, 4
Description, 1, 4, 6
DescriptionPower, 1
design, 3
desk, 4
detail, 3
Detailed, 4
detailed, 4
details, 4-5
Determine, 5
develop, 3
developed, 3
developers, 2
development, 2-3
device, 2-4
Devices, 1-7
devices, 1-4, 7
diagnostic, 4
diagrams, 3
different, 4
Dioxide, 5
directly, 2-4
Disk, 7
disk, 7
display, 3
displayed, 3
Displaying, 3
displaying, 3
Displays, 3
Distribution, 1-7
distribution, 2, 5
Documentation, 4
does, 3
dollar, 5
down, 3-5
Downloadable, 3
downloads, 3
drill, 3
drive, 7
driven, 3
driver, 2
drivers, 2
drop, 2
Dry, 4
dual, 7
due, 4
During, 4
during, 4-5, 7
DVD, 7

E

each, 5
ease, 1
Easily, 3-4
easily, 3
easy, 1, 3
Eaton, 1-4
eaton, 1-7
eb, 4
Edition, 2, 6
edition, 7
editions, 7
effectiveness, 5
Efficiency, 5

efficiency, 5
either, 3, 7
electrical, 3
electricity, 5
eliminating, 3
embedded, 3
embedding, 3
emergency, 4
enable, 2-3
enabled, 4
enables, 4
enabling, 3
end, 2
Energy, 5
energy, 5
enhancements, 3
enjoy, 1
ENT, 6
Enterprise, 2, 6-7
enterprises, 2
ENTn, 6
ePDUs, 2
equipment, 3
Error, 4
error, 4
errors, 4
etc, 2-3
Ethernet, 2
ETN, 4
Event, 3, 5
event, 3
events, 3-5
example, 3
Excel, 3-4
exchange, 4
existing, 1
Explorer, 7
Export, 4
export, 3
exported, 3
Express, 7
Extended, 4
extended, 4
Extensive, 2
External, 3

F

facility, 5
failure, 4
false, 3
fashion, 4
Feature, 2-4
feature, 3-4
Features, 1-4
features, 4
feeds, 3
feel, 3
File, 4
file, 3
files, 3-4
filter, 3
filtering, 3
find, 3
Fixed, 3
fixed, 3
floor, 3, 5
folder, 3
following, 7
For, 1-7
for, 2-5, 7
format, 3-4
formatting, 3
Four, 3
frames, 3
Framework, 7
frequently, 3
from, 3-5
functionality, 4
further, 3
fusion, 1

G

Gas, 5
gas, 5
gasses, 5
Gateway, 2, 4
gateway, 2
gathers, 4
Gauge, 3
gauges, 3

GB, 7
Geared, 2
General, 3
generally, 5
generator, 5
generators, 5
geographical, 3
get, 4
GHz, 7
give, 5
glance, 5
globe, 3
Graphic, 3
graphic, 3-4
graphical, 3
Graphics, 3
graphics, 3, 5
Green, 1
Greenhouse, 5
greenhouse, 5
grow, 7
guesswork, 4
Guide, 1-2, 4
Guides, 4

H

hands, 4
Hardware, 4, 7
hardware, 7
has, 4
have, 3, 7
health, 1
help, 4
helps, 3, 5
heterogeneous, 2
hierarchies, 4
hierarchy, 5
higher, 7
hospital, 3, 5
how, 4
HTTP, 4
HTTPS, 4
humidity, 5
Hypertext, 4

I

Ia, 3
Ib, 3
Ic, 3
IEEE, 3
If, 7
if, 3, 7
iFrame, 3
iFrames, 3
IIS, 7
images, 3
Immediate, 1-7
impact, 3
Import, 3
import, 3
in, 2-4
Included, 4
included, 2-3
includes, 1
including, 3-5
INCOM, 4
indicating, 5
indicator, 3
Information, 3
information, 1, 3-5
infrastructure, 1, 5
initial, 4
initiate, 4
install, 3-4
installation, 4, 7
Installed, 7
installed, 3-4, 7
Installer, 7
installing, 7
instructions, 4
Integration, 4
integration, 2, 4
integrators, 2
interconnectivity, 1
interface, 1, 3
interfaces, 3
interfacesAlarm, 3
Internet, 3, 7
interpret, 3
into, 1, 3
Introduction, 4
invaluable, 5
IP, 4
is, 1, 3-5, 7

ISO, 3
It, 1, 5
it, 3
itself, 7

J

Joint, 5

K

key, 1, 5
KMParts, 1-7
kW, 5
kWh, 5

L

Large, 2
large, 3, 7
last, 4
latest, 3
Layer, 4
layers, 3
Layout, 2, 4
layout, 3
Layouts, 3
layouts, 3
Learn, 4
learned, 3
Legacy, 4
legacy, 2
level, 4
levels, 5
Library, 7
library, 3
line, 3
link, 3
links, 3
List, 4
list, 4
loaded, 5
loading, 5
loads, 5
Local, 7
location, 3, 5
locations, 5
Log, 4
logic, 4
Logs, 4
look, 3
looking, 3
loss, 4
lost, 4

M

machine, 7
machines, 7
made, 2
Mail, 4
mail, 3
mails, 3
main, 4
making, 3
manage, 1
Management, 4, 7
management, 3
Manager, 4
manager, 2
manual, 4
maps, 3
maximum, 4
may, 4, 7
MB, 7
MCCs, 2
measurement, 3
measurements, 3
media, 3, 7
Memory, 7
memory, 7
Mercury, 5
message, 3
Metering, 1-7
metering, 1
meters, 2-3
Methane, 5

metrics, 5
Microsoft, 7
Millisecond, 4
millisecond, 4
mimic, 3
minimum, 7
Modbus, 2, 4
model, 4
Modem, 7
modify, 3
module, 2
Monitor, 3
Monitoring, 1-7
monitoring, 1, 3
more, 3
most, 3
motor, 1
Multiple, 3
multiple, 3
multitude, 3
must, 7

N

necessary, 3
need, 3
NET, 7
Network, 4
network, 3, 7
Nitrogen, 5
Nitrous, 5
no, 3
not, 3-4, 7
Note, 4
notice, 4
Notification, 3
notification, 3, 7
Number, 6
number, 7

O

object, 3
objects, 3
occurred, 4
occurring, 4
of, 1-5, 7
offensive, 5
on, 3-4
one, 3
only, 4
Open, 4
open, 3-4
OpenSSL, 4
operating, 4, 7
option, 3
Optional, 2
optional, 2
options, 4
or, 1-7
orderly, 4
other, 3
others, 2
out, 4
outlasting, 4
over, 4
Oxide, 5

P

Pack, 6-7
package, 1, 4
Packs, 6
Page, 1
page, 3
pagers, 3
pages, 3-4
Parallel, 4
Pareto, 5
Party, 7
party, 1-4
path, 1
PDUs, 2
per, 5
perfect, 5
pertinent, 3
photographs, 3
picture, 3, 5
piece, 3
pixels, 7
plain, 3
plans, 3

plant, 3
Please, 4
plot, 3
plotted, 3
Portal, 3
portals, 3
Power, 1-7
power, 1-5
PowerNet, 1
PowerVision, 1
preferences, 3
prevent, 4
printer, 7
prior, 7
privileges, 4
PRO, 6
Processor, 7
processor, 7
Product, 1-2, 6
product, 4
products, 2
Professional, 2, 6-7
PROn, 6
PROnPXR, 6
Protective, 1-7
protective, 1
Protocol, 4
protocols, 2
provided, 3
Provides, 5
provides, 1, 5
providing, 4
pull, 4
Purchase, 4
purposes, 4
PX, 6
PXR, 6
PXS, 6-7

Q

Quality, 2, 5
queried, 4
query, 4
Quick, 4
quickly, 3

R

ramifications, 3
range, 1, 5
ranges, 5
rapidly, 4
reached, 3
read, 4
ready, 2
Receive, 3
redundancy, 4
Redundant, 5
redundant, 4
refer, 4
references, 4
relay, 4
Relays, 1-7
relays, 1-2
remote, 7
Removable, 7
Report, 5
report, 4-5
Reporting, 1-7
reporting, 4
reports, 5
represent, 4
required, 7
Requirements, 7
requirements, 5
requires, 7
reserve, 7
resolution, 4, 7
reviewed, 3, 5
right, 3
RO, 7
RPPs, 2
RTU, 4
running, 4, 7
Runtime, 7
runtime, 4

S

saved, 4
saving, 4
scale, 3

screen, 3
screens, 3
screenshots, 4
search, 3
searching, 3
Secure, 4
secure, 4
Security, 4
security, 4
seen, 3
selected, 3-5
Selection, 1-2, 6
selection, 3
separate, 3
sequence, 4
sequential, 4
Server, 2, 7
server, 7
Service, 4, 6-7
service, 4
services, 4
session, 7
set, 5
Sets, 2
setups, 4
several, 3
sheet, 4
showing, 4
shut, 4
Shutdown, 4
shutdown, 4
Simple, 3-4
simple, 1
single, 1, 3, 5-6
site, 3
six, 5
SMTP, 4
SNMP, 2, 4
Sockets, 4
Software, 1-7
software, 1-5, 7
Solution, 1
solution, 1
Sound, 7
sounds, 7
source, 5-6
sources, 5
SP, 7
space, 7
speak, 4
specialist, 4
specific, 7
Specification, 7
Specifications, 7
specifications, 4, 7
spectrum, 2
spotted, 3
spreadsheet, 3-4
SQL, 4, 7
SSL, 4
Standard, 3, 5, 7
standard, 2-5
Start, 4
start, 3
started, 4
starters, 1
startup, 4, 6
state, 3
status, 1, 5
steam, 5
step, 4
storage, 7
Streaming, 3
streaming, 3
street, 3
Studio, 7
subject, 4
subset, 2
such, 1-2, 5
Sulfur, 5
Summary, 5
summary, 5
supplies, 1
Support, 1-7
support, 2-4
Supported, 4, 7
supported, 2, 4
supports, 5
switches, 5
switchgear, 2
Synchronization, 4
synchronization, 4
System, 4
system, 1-5
systems, 4, 7

T

take, 2
Takes, 4
tampering, 4

TCP, 2, 4
Tech, 1-7
Technical, 7
technical, 4
technology, 3
temperature, 5
templates, 3
test, 5
testing, 5
text, 3
that, 4-5
THD, 5
The, 3-5, 7
the, 1-5, 7
their, 2
them, 3
There, 3
These, 4
Third, 7
third, 1-4
This, 4
this, 7
threshold, 3
through, 1, 3
tier, 4
Time, 4
time, 3-5
timestamp, 4
to, 1-7
together, 5
top, 5
topmost, 3
total, 5
toward, 2
Training, 4
Transfer, 4
transfer, 5
Transmission, 4
Trend, 2-3
trend, 5
TrendingGraphic, 3
Trends, 3
trends, 3
triggered, 3
trip, 1
Turnkey, 4
turnkey, 4
Two, 4
type, 3
typical, 7

U

Ultimate, 7
unauthorized, 4
understand, 3
understanding, 4
uninterruptible, 1
units, 1
up, 3-4, 6
updates, 3
upgrade, 1
UPS, 4
UPSs, 2
usage, 5
use, 2-4
used, 3
User, 4
user, 3-5
userdefined, 5
users, 1-2, 4
uses, 4
using, 3
Utilities, 5
utilities, 2
utilized, 3
utilizing, 3

V

Vab, 3
value, 5
variables, 3
variety, 2
various, 4
vary, 4
Vbc, 3
VDFs, 2
version, 3
versions, 3
VFDs, 2
via, 2-4, 7
Video, 4, 7
video, 4
Videos, 4
View, 3
view, 3

viewed, 3
Viewer, 3
viewer, 2-3
viewing, 3
views, 3-4
virtual, 7
vital, 1
volts, 5
Volume, 1-7

W

WAGES, 5
watching, 4
water, 5
Waveform, 3
waveform, 3
Waveforms, 3
Web, 1-3
well, 5, 7
what, 3
when, 3-4
which, 1, 3
while, 2
who, 2
wide, 1
Widget, 3
Widgets, 3
will, 4, 7
Windows, 4, 7
wish, 7
with, 2-5, 7
within, 3, 5, 7
without, 3-4
world, 3, 5
write, 4
WS, 4
www, 1-7

X

XP, 7
Xpert, 1-7

Y

year, 7
You, 7
you, 3-5, 7
your, 1, 3, 5, 7